

## **MODEL PAPER PHYSICS CLASS 9**

**NOTE:** Attempt all questions from Section A by filling the corresponding bubble on the MCQs RESPONSE SHEET. It is mandatory to return the attempted MCQs sheet to the Superintendent within given time.

### **SECTION –A**

**Time:** 20 Minutes

**Marks:** 12

1. The number of significant digits in 0.0096800 is
  - a. 2
  - b. 3
  - c. 4
  - d. 5
2. Car is moving along the straight road with velocity 10 m/s, after 4s its velocity becomes 30 m/s, the acceleration of car is:
  - a. 5 m/s<sup>2</sup>
  - b. 10 m/s<sup>2</sup>
  - c. 80 m/s<sup>2</sup>
  - d. 160 m/s<sup>2</sup>
3. The centripetal acceleration of body of mass 1.5 kg moving with velocity 3 m/s in circle of radius 3 m is:
  - a. 6 m/s<sup>2</sup>
  - b. 4 m/s<sup>2</sup>
  - c. 3 m/s<sup>2</sup>
  - d. 0.5 m/s<sup>2</sup>
4. The unit of coefficient of friction is:
  - a. m/s
  - b. m/s<sup>2</sup>
  - c. N-m
  - d. Unit less quantity
5. The second condition of Equilibrium is:
  - a.  $\sum T=0$
  - b.  $\sum F=0$
  - c.  $\sum P=0$
  - d.  $\sum W=0$
6. The angle between rectangular components of force is:
  - a. 30°
  - b. 45°
  - c. 60°
  - d. 90°

7. Which of the following quantity will change when a body moves from sea level to mountain?
- Mass
  - Volume
  - Weight
  - Density
8. A boy of mass 45 kg runs up on stairs of height 4m in 5sec, the power in boy ( $g=10\text{m/s}^2$ ) is:
- 450 watts
  - 360 watts
  - 36 watts
  - 24.5 watts
9. The energy due to motion of body is:
- Kinetic energy
  - Potential energy
  - Chemical energy
  - Thermal energy
10. The hydraulic brakes of heavy vehicles operate on:
- Archimedes Principle
  - Pascal's principle
  - Work energy principle
  - Principle of moment arm
11. The temperature of human body is  $37^\circ\text{C}$ , the same temperature in Fahrenheit will be:
- $96.6^\circ\text{F}$
  - $97.6^\circ\text{F}$
  - $98.6^\circ\text{F}$
  - $99.6^\circ\text{F}$
12. The transfer of heat from the sun to earth is due to:
- Radiation
  - Convection
  - Conduction
  - Absorption

## SECTION –B

**Time:** 2 Hours 40 Minutes

**Marks:** 32

1. Briefly attempt any Eight of following short questions, each carry 4 marks

- i. Describe **Four** crucial roles of Physics in daily life.
- ii. Differentiate scalars and vectors with suitable examples.
- iii. Define momentum along with its mathematical form and unit. Also write at least **Two** factors on which it depends.
- iv. Define friction and write at least **Three** methods to reduce friction.
- v. Calculate the mass of earth by using Newton's law of gravitation.
- vi. Define heat and temperature. Write at least two differences between heat and temperatures.
- vii. Derive K.  $E = \frac{1}{2} mv^2$
- viii. Define power along with its mathematical form and unit.
- ix. State Pascal 's Law and also write **Three** applications in daily life.
- x. Define pressure. Show that liquid pressure  $P = \rho g h$
- xi. Define transfer of heat by convection, and give three examples from daily life.

## SECTION –C

**Marks:** 21

**NOTE:** Attempt any THREE of the following questions, each carry 7 marks

2. i. State Newton's second law of motion. 2+3+2  
ii. Prove that time rate of linear momentum is equal to net force acting on body.  
iii. The momentum of bullet fired from gun is 0.732 ns and velocity is 62 m/s.  
Find the mass of bullet.
3. i. Define and explain turning effect of force by relating it to everyday life. 4+3  
ii. The force applied to open door is 12 N at  $30^\circ$ . Find the horizontal and vertical components of force.
4. i. Define work and its units. 4+3  
ii. A Girl is pulling trolley school bag by applying a force of 15 N at  $45^\circ$  and covers a distance of 100 m. Calculate the work done.
5. i. Describe the thermal expansion of solid. 4+3  
ii. Explain why evaporation causes cooling?